A NOVEL GENE ASSOCIATED WITH REGULATION OF ADIPOSITY AND INSULIN RESPONSE

ABSTRACT OF THE DISCLOSURE

This invention pertains to the identification and isolation of a gene implicated in the fatty liver dystrophy (*fld*) phenotype. Mouse and human forms of the novel gene, designated herein as *Lpin1/LPIN1* (mouse and human genes, respectively), are identified. This invention additionally provides methods of screening for agents that alter adipose tissue development. The methods involve contacting a cell containing a *Lpin1* gene with a test agent; and detecting a change in the expression or activity of a *Lpin1* gene product, where a difference in the expression or activity of *Lpin1* in the contacted cell indicates that the agent alters or is likely to alter adipose tissue development. Also provided are methods of identifying Lpin1 mutations, and methods of mitigating symptoms of lipodystrophy, obesity, diabetes, atherosclerosis and related pathologies.